

Appl. No.: 10/631,907
Amdt. dated August 3, 2005
Reply to Office action of May 3, 2005

REMARKS/ARGUMENTS

In the final Office Action dated May 3, 2005, Claims 19-21 and 30-34 are pending, of which only Claim 19 is independent. Claims 19-21 and 30-32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1 and 7 of U.S. Patent No. 6,638,381 to Keener, et al. Claims 19, 20, 30, and 31 are rejected under 35 U.S.C. § 102(b) as being unpatentable over JP 10195567A (“JP ’567”). Claims 21 and 32-34 are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP ’567 in view of U.S. Patent No. 4,159,666 to Briles.

Applicant is submitting a terminal disclaimer regarding the Keener, et al. reference and therefore requests withdrawal of the double patenting rejection.

Regarding the rejection over JP ’567, independent Claim 19 is amended above to recite that the shank and head of the rivet “consist essentially of one of the group consisting of aluminum, an aluminum alloy, titanium, and a titanium alloy.” Claim 20, which previously included a similar feature, is cancelled. Thus, Claim 19 now requires that the shank and head consist essentially of a homogenous material, i.e., aluminum, titanium, or an alloy of either of those metals. An alloy, by definition, is a homogenous mixture of metals. *See, e.g.*, The American Heritage® Dictionary of the English Language, Fourth Edition.

Applicant is submitting herewith an Information Disclosure Statement, which includes a full translation of the JP ’567 reference. JP ’567 does not disclose the use of a homogenous material of aluminum, titanium, or alloy thereof. To the contrary, JP ’567 is specifically directed to an aluminum matrix composite material that includes uniformly dispersed aluminum and boride. Indeed, JP ’567 specifically addresses the difficulties in providing “a uniform dispersion of reinforcing particles in matrix [which] is important for enhancing the characteristics of particle-dispersed type composite material,” including “the difficulty of uniformly dispersing the particles because the specific gravity of boride particles differs greatly from that of molten aluminum.” Paragraph 2 (emphasis added). “The purpose” of JP ’567 “is to provide self-lubricating aluminum composite material in which the coefficient of friction is decreased and weight loss of the material itself due to wear is reduced, and that also has outstanding

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characteristics of high strength, wear resistance, and self-lubricating properties while wear of partner material, which lacks wear resistance, is inhibited through the effects of self-lubricating dispersed particles, as well as its production.” Paragraph 4. Accordingly, JP ’567 states that “[a]luminum oxide particles, aluminum carbide particles and boride particles having aforementioned mean grain size are uniformly dispersed at aforementioned volumetric fractions in aluminum or aluminum alloy matrix particles in the aluminum composite material pursuant to the present invention.” Paragraph 12. Thus, JP ’567 does not teach or suggest a rivet that is formed of a homogenous material of aluminum, titanium, or alloy thereof, as set forth in Claim 19. Moreover, it would not have been obvious to modify JP ’567 to use a refined powder consisting of the recited materials of Claim 1 since JP ’567 teaches the use of the powder specifically for achieving the uniform dispersion of reinforcing particles in the matrix. Accordingly, Claim 19 is patentable over JP ’567, as are each of the dependent Claims 21, 30, 31, and 33-37.

New independent Claim 38 incorporates the limitations of previous Claim 19 and further recites that “said shank and said head consist essentially of a grain structure having a grain size between about 3 microns and 5 microns.” The Office Action states, with regard to Claim 30, that JP ’567 discloses a rivet manufactured to include a matrix having “a grain size of 5 micrometers or less which is within the claimed range.” Office Action, page 3. However, JP ’567 does not teach or suggest that the shank and head consist essentially of a grain structure with a grain size between about 3 and 5 microns. In fact, JP ’567 specifically provides that the aluminum oxide particles, the aluminum carbide, and the boride are substantially outside the claimed range. (“As a result, composite material would be obtained having aluminum oxide particles, aluminum carbide particles, and boride particles dispersed throughout the matrix, with the mean grain size of the matrix being not more than 5 μm , the mean grain sizes of the dispersed aluminum oxide and the aluminum carbide together being not more than 100 nm, and the mean grain size of boride being not more than 1 μm .” Summary paragraph bridging pages 1-2 (emphasis added).) Accordingly, Applicant submits that this aspect of Claim 38 provides an additional basis of distinction over JP ’567 and, therefore, independent Claim 38 is allowable. The dependent

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Claims 39-46, which generally include features of previous Claims 20, 21, 31, and 33-37, are allowable for the same reasons.

For the reasons set forth above, Applicant submits that pending Claims 19, 21, 30, 31 and 33-46 are allowable. Nevertheless, in the event that the rejections are maintained, Applicant respectfully requests entry of the amendments, as the claims are thereby put in better condition for appeal.

* * * *

CONCLUSIONS

In view of the remarks presented above, Applicant submits that Claims 19, 21, 30, 31, and 33-46 are allowable and the present application is in condition for allowance. As such, the issuance of a Notice of Allowance is therefore respectfully requested. In order to expedite the examination of the present application, the Examiner is encouraged to contact Applicant's undersigned attorney in order to resolve any remaining issues.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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Grace R. Rippy